

Notice of Allowability

Application No.

10/568,981

Examiner

Ling-Siu Choi

Applicant(s)

CHEN, LINFENG

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to The Amendment dated 11/16/2007.
2. ☒ The allowed claim(s) is/are 1-17.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This Office Action is in response to the Amendment filed 11/16/2007. Claims 14-17 have been added and claims 1-17 are now pending.

Examiner's Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. The application has been amended as follows:

Claims **15** and **17**, line 1, change "The composition of claim 1" to --The catalyst composition of claim 1--.

Allowable Subject Matter

4. Claims 1-17 are allowed.
5. The following is an examiner's statement of reasons for allowance:

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The present claims are allowable over the closest references: Rebhan (US 5,432,244 = EP 0 490 451 A2) and Tanaka (JP 61-203105).

Summary of claim 1:

A catalyst composition for the polymerization of propylene or mixtures of propylene and one or more copolymerizable comonomers, comprising	
A. one or more Ziegler-Natta procatalyst	one or more transition metal compounds
	one or more monoesters of aromatic carboxylic acid internal electron donors
B. aluminum containing cocatalysts	
C. a mixture of two or more different selectivity control agents (SCA)	<u>from 98.5 to 99.9 mol %</u> of one or more esters of one or more aromatic monocarboxylic acids or substituted derivatives thereof
	<u>from 1.5 to 0.1 mol %</u> of one or more alkoxysilane compounds

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Summary of claim 7:

A polymerization process comprising contacting propylene or a mixture of propylene and one or more copolymerizable comonomers under polymerization conditions at a temperature from 45 to 100 °C with	
a catalyst composition	one or more Ziegler-Natta procatalyst compositions: one or more transition metal compounds and one or more internal electron donors selected from the group consisting of esters of aromatic monocarboxylic acids
	one or more aluminum containing cocatalysts; and
	a mixture of two or more different selectivity control agents, comprising <u>from 98.5 to 99.9 mol%</u> of one or more esters of one or more aromatic monocarboxylic acids or substituted derivatives thereof, and <u>from 1.5 to 0.1 mol %</u> of one or more alkoxysilane compounds

Rebhan discloses a process for the polymerization of propylene or a mixture comprising propylene and one or more alpha-olefins and, optionally, one or more diolefins comprising contacting the propylene or the mixture of olefins in at least one reaction zone, under polymerization conditions with a catalyst system comprising (i) a solid catalyst precursor which includes magnesium, titanium, a halogen, and a **mono-** or polycarboxylic acid ester: $\text{TiCl}_4 \bullet 12\text{MgCl}_2 \bullet 2\text{C}_6\text{H}_5 \text{COOC}_6\text{H}_5$; (ii) a hydrocarbyl aluminum cocatalyst; and (iii) a mixture of selectivity control agents comprising a mono- or polycarboxylic acid ester and a silicon compound containing at least one silicon-oxygen-carbon linkage with the proviso that the molar ratio of the ester to silicon compound in the mixture of selectivity control agents is in the range of about (1.5 –

50):1; the cocatalyst is a trialkyl aluminum; the mixture of selectivity control agents comprises para-ethoxyethyl benzoate and a dialkyldialkoxysilane or an alkyltrialkoxysilane, which can be cyclohexylmethyl dimethoxysilane (abstract; col. 4, lines 54-55; claims 1, 4, and 9). However, Rebhan does not teach or fairly suggest the claimed catalyst composition, wherein the ratio of the aromatic monocarboxylic acid to the alkoxysilane is (65.7-999):1.

Tanaka discloses a catalyst obtained by mixing a complex (A) of an organomagnesium compound with a Ti compound, with a trialkylaluminum (B) and a stereoregularity improver (C) comprising 1 part by weight of aromatic carboxylic ester and 10 -1 parts by weight of Si-O bond-containing organosilicon compound (abstract). However, Tanaka does not teach or fairly suggest the claimed catalyst, wherein the ratio of the aromatic monocarboxylic acid to the alkoxysilane is (65.7-999):1.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

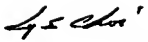
Conclusion

6. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114.


LING-SUI CHOI
PRIMARY EXAMINER

February 01, 2008